



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<p>(54) Title: <b>A METHOD OF EVALUATING CONSUMER CHOICE THROUGH CONCEPT TESTING FOR THE MARKETING AND DEVELOPMENT OF CONSUMER PRODUCTS</b></p> <p>(57) Abstract</p> <p>A method of concept testing includes performing a multi-attribute evaluation of prompts comprising concepts and products, eliciting consumer's evaluations of the extent to which each attribute ideally should be possessed by a product, eliciting consumer's evaluations of their likelihood of purchasing the products and concepts, performing an independence factor analysis of the attributes whereby clusters of attributes are identified as factors in purchase decisions, performing a squeeze analysis whereby a matrix of factors (Fig. 2) is created wherein points defining the distances between each product (A-F) and the ideal product (ID) are plotted and a rating (1-6) is assigned to each factor and to each attribute so that the distance between each product and the ideal product are re-ranked into the same order as the purchasing likelihoods, and measuring on a factors map (Fig. 3), for each prompt, the deviation of each attribute evaluation from the mean attribute evaluation for all prompts.</p> <div data-bbox="698 1260 1347 1743"> </div>		

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A METHOD OF EVALUATING CONSUMER CHOICE  
THROUGH CONCEPT TESTING FOR THE  
MARKETING AND DEVELOPMENT OF CONSUMER PRODUCTS

BACKGROUND OF THE INVENTION

5           This invention relates to quantitative methods  
for evaluating consumer response to a product idea prior  
to the introduction to the market of an actual product  
which embodies that idea and for generating  
communication designed to alter consumer attitudes  
10 toward existing products. These methods involve the  
evaluation by consumers of product concepts having  
certain rational benefits, such as "a detergent that  
removes stains but is gentle on fabrics," or non-  
rational benefits, such as "a shampoo that lets you be  
15 yourself." Such methods are commonly referred to as  
concept testing and have been performed using field  
surveys, personal interviews and focus groups, in  
combination with various quantitative methods, to  
generate and evaluate product concepts.

20           The concept generation portions of concept  
testing have been predominantly qualitative.  
Advertising professionals have generally created  
concepts and communications of these concepts for  
evaluation by consumers, on the basis of consumer  
25 surveys and other market research, or on the basis of  
their own experience as to which concepts they believe  
represent product ideas that are worthwhile in the  
consumer market.

30           The quantitative portions of concept testing  
procedures have generally been placed in three  
categories: (1) concept evaluations, where concepts  
representing product ideas are presented to consumers in  
35 verbal or visual form and then quantitatively evaluated.

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5 by consumers by indicating degrees of purchase intent,  
likelihood of trial, etc., (2) positioning, which is  
concept evaluation wherein concepts positioned in the  
same functional product class are evaluated together and  
(3) product/concept tests, where consumers first  
evaluate a concept, then the corresponding product, and  
10 the results are compared.

Prior to this invention, concept testing has  
been inadequate as a means to identify and quantify the  
criteria upon which consumer preference of one concept  
over another was based. These methods were insufficient  
15 to ascertain the relative importance of the factors  
responsible for or governing why consumers, markets and  
market segments reacted differently to concepts  
presented to them in the concept tests. Without such  
information, market researchers and advertisers, with  
20 their expertise, could generalize, on the basis of a  
concept test, as to how consumers might react to the  
actual products or to variations of the tested concepts.  
Communication of the concept, as embodied in a new  
product, has generally been left to the creativity of  
25 the advertising agency. No systematic quantitative  
method was known, however, which could accurately  
identify the criteria on which the consumer choices were  
based and the contribution or importance of each  
criterion to the purchase decision. Therefore, previous  
30 concept testing methods have failed to provide market  
researchers with the complete information necessary for  
them to create products specifically tailored to satisfy  
a consumer group balance of purchase criteria.

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Moreover, previous concept testing methods  
5 have failed to accurately quantify the relationships  
between consumer response to concepts and consumer  
choice of existing products which compete in the same  
consumer market. Thus, the prior methods were unable to  
provide a communication of the benefits of a consumer  
10 product, closely representing the tested concept, to a  
degree of accuracy commensurate with that of the present  
invention.

These problems of concept testing have been  
15 identified in business and marketing journals. For  
example, in Moore, William L., Concept Testing, journal  
of Business Research 10, 279-294 (1982), a literature  
survey and review of concept testing methodology, it is  
pointed out that concept tests have failed to account  
20 for changes between the concept tested and the  
communication describing the benefits of the product  
which embodies the concept. The Moore article reports  
that "no amount of improvement in current concept  
testing practices can remedy these problems." this is  
25 reflective of the fact that none of the prior methods  
provided a quantitative means for ascertaining the  
relative importance of the underlying criteria of  
concept choices as a means for identifying the visual  
and verbal expressions of the concepts which best  
30 communicate the benefits sought by the consumer. Nor  
did the prior methods quantify the relationships between  
concepts and existing products offered in the same  
consumer market. The ability of the method of the  
present invention to ameliorate or overcome the above  
35 shortcomings provides substantial improvement in

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communication of the concepts identified in testing and  
offered to the market as a product.

5

#### SUMMARY OF THE INVENTION

The present invention is a novel method of  
consumer product concept testing which utilizes a unique  
10 combination of qualitative methods to guide concept  
generation and quantitative concept evaluation. More  
specifically, the method of this invention provides a  
model of consumer choice based upon multi-attribute  
evaluations of both concepts and existing products  
15 similarly positioned in the market which, when combined  
with effective methods of concept generation, not only  
identifies the relative appeal to consumers of  
alternative products and concepts of products and the  
criteria on which those choices are based, but the  
20 relative importance of each criterion to the choice.

The concepts to be tested are preferably  
generated in accordance with a systematic, qualitative  
approach. Product benefits are elicited from consumers  
25 in qualitative interviews to determine what positive  
characteristics the consumers associate with similarly  
positioned products. The benefits elicited are both  
rational and non-rational. The products are usually  
identified by brand and are currently available for  
30 purchase in the consumer market. The interviews are  
preferably projective in that they include the  
elicitation of product benefits which, to the consumer,  
personify the products. The market researcher, with  
this information, then guides the generation of  
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5 concepts, including verbal and visual expressions which represent the benefits which consumers associated with the similarly positioned products.

10 The key to the success of this invention resides in its ability to quantitatively identify the criteria upon which consumer choices of concepts are based and the importance of each criterion to the consumer choice. This invention recognizes that the decision of a consumer to purchase a product is, in most cases, based upon little more than 3 to 5 factors. This invention utilizes 30 to 50 attributes in multi-  
15 attribute evaluation of products and concepts, which attributes are grouped, by independence factor analysis, into clusters. These clusters represent the underlying factors of the consumer purchase decision.

20 In carrying out the invention, a squeeze analysis of the attributes is performed whereby the attributes, on the basis of the attribute evaluations, and the factors, on the basis of representative attribute evaluations within each cluster, are ordered  
25 in accordance with their relative contribution or importance to the purchase decision. This ordering is achieved by squeezing a multi-dimensional matrix and remeasuring the Euclidean distances thereon between points representing the evaluated products and concepts  
30 and the point representing an evaluated reference product, usually the ideal. These distances are reordered to match the order of the preferences or purchase intent expressed by the consumers for the respective products and concepts.  
35

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5           The determination of the relationships between  
these Euclidean distances and evaluations of purchase  
intent for existing products, as well as for concepts,  
constitutes a pattern that is revealing of the  
considerations upon which consumers make purchase  
decisions. This connection between the criteria  
underlying consumer behavior in the actual market and in  
10 choosing between concepts has not previously been  
achieved and leads to better targeting of product and  
communication development.

15           This information thus is singularly valuable  
to quantitatively identify the verbal and visual  
expressions which most effectively communicate the  
promises or product benefits which have been identified  
as the most important criteria in consumer choice.  
20 These visual and verbal communications are useful, for  
example, in creating or altering a marketing strategy  
for consumer products, changing or creating the images  
of a consumer product through advertising and in  
targeting consumer groups.

25

#### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a depiction of two dimensions of the  
multidimensional matrix, wherein points representing  
products and an ideal product have been plotted with  
30 respect to two attributes.

FIG. 2 illustrates the effect upon the multi-  
dimensional matrix, as depicted in FIG. 1, caused by a  
squeeze analysis of the attributes.  
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FIG. 3 is an example of a factors map for a  
concept.

5

DESCRIPTION OF THE PREFERRED METHOD  
OF CARRYING OUT THE INVENTION

A multi-attribute evaluation of prompts,  
comprising existing products and concepts of products  
which are similarly positioned in the consumer market,  
is performed using a method which will result in an  
acceptable level of behavioral variance among consumers  
within a product class. The method of attribute  
evaluation used in this process should achieve over 70%  
and, preferably, over 90% behavioral variance. This is  
essential for the process to provide information  
regarding patterns of decision making, based on  
importance of criteria, and to successfully communicate  
the benefits of products embodying the tested concepts.

20

The evaluations are limited to products and  
concepts found in the same consumer category or market  
based upon identity or similarity of product use. For  
example, products and concepts useful in haircare may be  
tested for a particular benefit such as superior  
rinsability.

25

In a preferred method of attribute evaluation  
for use in the method of this invention, consumers are  
presented with a group of related products in  
qualitative, open-ended interviews and requested to  
identify words or phrases which describe each product.  
The creation of sample consumer groups and structuring  
of interviews for this purpose are established according  
to conventional statistical guidelines.

35

5 The next step in performing a preferred method  
of attribute evaluation is the selection of the  
appropriate set of attributes to be used in the  
evaluations. Using various qualitative interviewing  
techniques, consumers are requested to identify (1)  
rational descriptors, which describe the products in  
10 terms of function or physical characteristics, and (2)  
emotional descriptors, which describe the emotional  
reasons which the consumers have for choosing a product  
such as, for example, status, feelings of trust in the  
brand, personal identification with the brand or the  
communication of its benefits in advertising media, and  
15 which include (i) stereotype descriptors, which  
consumers use to describe the demographic traits of  
users of the products and (ii) personality descriptors  
which consumers use to personify brands or products.

20 The descriptors obtained in the above  
enumerated three areas are usually 1000 to 2000 in  
number which number is initially reduced by various  
qualitative interviewing techniques, to reduce the  
number of descriptors, usually to approximately 100 to  
25 200, thereby enabling the subsequent application of  
statistical analyses to further reduce such numbers.  
These techniques preferably include so-called game  
playing techniques, wherein consumers try to suggest a  
given product, using attributes. The redundant  
30 descriptors are eliminated from consideration as  
attributes and will not be used in the quantitative  
interviews.

35 The descriptors remaining after the initial

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reduction are then submitted in quantitative interviews  
to consumers, in association with the products, wherein  
5 consumers are requested to evaluate the extent or degree  
to which each descriptor presented to him is  
attributable to each product presented to him in the  
interview. Evaluations are obtained for all remaining  
10 descriptors and for all products overall, although all  
products and all descriptors preferably are not  
presented to each consumer in the interviews. A  
preferred method of quantitative interviewing is the  
SCRIBE computer aided interview, available from Frost  
15 International Research, whereby consumers are shown a  
monitor listing various items and are requested to cause  
a cursor or other indicator, using a hand-held control,  
to move along a line visually representing a linear  
scale of the degree or extent to which a descriptor  
20 describes, is associated with or is otherwise  
attributable to each product. The process is repeated  
among a representative sample of consumers, created on  
the basis of standard statistical guidelines. All data  
is preferably not presented to each consumer, as pointed  
25 out above, but each product is evaluated sufficiently  
with respect to each descriptor so that the data is  
sound and within generally accepted confidence levels.

A discriminant analysis for the set of  
descriptors is performed. A discrimination index is  
30 thereby formed wherein each descriptor is assigned a  
value which represents the extent to which that  
descriptor discriminates between products among all of  
the consumers interviewed. The evaluated descriptors  
35 are then ordered according to their respective ranks in

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5 the discrimination index. The final set of attributes to be used in the final quantitative interviews are chosen from the descriptors on the bases of rank in the discrimination index and ability to provide the greatest degree of behavioral variance and usually number between 30 and 50.

10 The final set of approximately 30 to 50 attributes is then presented to consumers in conjunction with existing products and concepts. In quantitative interviews, consumers are requested to evaluate the  
15 extent to which each attribute is attributable to each product. Also elicited from the consumers is the extent to which each attribute is attributable to ideal products or to one or more other reference products in the same produce use category. During these final  
20 interviews, consumers are also requested to express a degree of preference for each product, which can be expressed as a preference for one item relative to the others, or as a degree of likelihood that the consumer would choose or purchase the item.

25 The concepts to be evaluated are generated by first eliciting from consumers in projective qualitative interviews benefits that consumers associate with existing products in the class of products to which the  
30 concepts to be tested relate. The benefits elicited are both rational and irrational. The interviews are preferably projective in that they result in the elicitation of benefits which include "characteristics" of the products as personified. The benefits elicited  
35 in the qualitative interviews are then used as a guide

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5 in the creation of verbal and visual concepts which  
represent or communicate the benefits elicited in the  
qualitative interviews. Devising the concept statement,  
visual image or combination thereof is the creative work  
of advertising professionals and, for the purpose of  
generating concepts for evaluation by the method of this  
invention, is preferably based upon benefits which are  
10 elicited by market researchers in the aforementioned  
projective interviews.

15 The concepts generated as described above and,  
preferably, additional concepts which are generated  
according to known methods, are submitted to consumers  
in quantitative interviews wherein the consumers  
evaluate the concepts using the attributes selected  
according to the method described above. This multi-  
attribute evaluation is also performed in the  
20 quantitative interviews with respect to existing benefit  
expression for products which are in the same category  
as the concepts, for example, as communicated in current  
advertising. These concepts and expressions are  
collectively referred to as prompts and are submitted to  
25 the consumer for attribute evaluation.

Another response elicited from the interviewed  
consumers, in addition to attribute evaluations, is an  
30 indication of likelihood of purchasing a product  
associated with the prompt. In this regard, the  
consumer is asked to rate, on a scale of 1 to 100, for  
example, what the likelihood is of that consumer  
purchasing some product which possesses the expressed  
benefits or which is represented by the concept  
35

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presented.

5           A series of so-called data-check responses  
should be elicited from the consumers during the  
interviews to insure that the consumers understand the  
prompts being presented to them and that the market  
10 researcher properly interprets and applies the  
evaluations. In open-ended, qualitative inquiries,  
consumers are requested to identify their personal likes  
and dislikes about the prompt, expectations of the  
usefulness and quality of the prompt, the credibility of  
15 the given purpose of the prompt, identification of  
purposes other than the given purpose which would be  
appropriate for the prompt and, generally, to  
spontaneously respond to the main idea or purpose of the  
prompt. These responses may indicate a misunderstanding  
20 of a given prompt on the part of a consumer, which might  
justify disregarding his evaluation related to that  
prompt.

          The success of the market researcher in  
25 creating the concepts to reflect the respective elicited  
product benefits is also preferably checked by  
requesting the consumers to evaluate the extent to which  
the benefits, which were the basis of the created  
concept, are attributable to that concept. Consistently  
30 poor results may justify rejecting the created concept  
as a poor representation or communication of the  
benefits which the concept was designed to communicate  
to the consumer.

35           An independence factor analysis of the

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attributes is then performed, using the quantitative data obtained from the attribute evaluations, whereby clusters of related attributes are formed and identified as factors representing the constructs of consumer behavior associated with distinguishing between the products.

A squeeze analysis of the attributes and factors is then performed, wherein a point representing each product and each reference product, for a given purpose or product positioning, is then plotted on a multi-dimensional matrix based upon the attribute evaluations for each respective product and reference product. The relationships between the points representing the products are best represented by the Euclidean distance across hyperspace between these points and the point representing the reference product on the multi-dimensional matrix and by a comparison of those distances to the expressed preferences for the respective products. The reference product used is preferably a theoretical ideal product for which consumers are requested to evaluate the extent to which each attribute would ideally be possessed by that product. The reference product can also be an actual product, such as, for example, the brand most often used or purchased by consumers or the product most frequently identified as the brand currently used by the consumers.

Each factor and each attribute is rated by performing a squeeze analysis of the attributes so that the Euclidean distances between the points on the matrix representing each item and the ideal or other reference

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5 item inversely correspond to the expressed preferences  
for or likelihood of purchasing the respective products.  
These attribute ratings indicate the relative  
contribution of each factor and each attribute to the  
consumers' choice or purchase decision.

10 The multidimensional matrix is formed by  
plotting points representing each existing product and  
concept, based upon the attribute evaluations associated  
with them by the consumers. The number of dimensions of  
the matrix is equal to the number of attributes by which  
15 the products and concepts have been evaluated, which  
commonly number from 30-50. In Figure 1, the positions  
of points representing six products or concepts are  
shown by circles containing the letters "A" through "F"  
and the ideal by "ID", in two dimensional space defined  
20 by the evaluations of the attributes, "convenient" and  
"inexpensive," for a single consumer. Each point "A"  
through "F", representing a product or concept, is  
further associated with a subscript identifying its  
rank, in descending order, of expressed degree of  
25 preference or likelihood of purchase. The Euclidean  
distances between the points representing the ideal "ID"  
and each item "A" through "F," respectively, are  
measured and a squeeze analysis of the attributes is  
performed, iteratively according to St. James' theorem,  
30 as depicted in Figure 2 for the same two attributes  
shown in Figure 1. The attributes are rated so that the  
points "A" through "F," which are numbered "1" through  
"6" in Figure 2 to reflect their relative likelihoods of  
being purchased, are realigned during the squeeze so  
35 that the Euclidean distances between the ideal point and

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points "1" through "6" in Figure 2, respectively, from short to long, are ranked in the same order to be proportional to the likelihoods of purchasing each respective product, from greatest to least. The use of only two attributes, or dimensions, in Figures 1 and 2 is to enable a representative portion of the multi-dimensional matrix and squeeze analysis to be depicted in a two-dimensional medium. In creating the matrix and performing the squeeze analysis, all attribute evaluations are actually utilized. The values used to rate the attributes and factors to obtain the foregoing relationship between Euclidean distances on the matrix and degrees of likelihood of purchase are recorded as importance ratings, each of which is assigned to the respective attributes and factors and reflects the relative contribution of the attribute and factor as a criterion in the consumers' purchase decision.

It is useful to analyze the data obtained from the attribute evaluations separately for market segments defined by various characteristics. It is therefore preferable to elicit from the consumers, during the interviews, demographic, attitude, opinion, product usage and other behavioral and characteristic information about each consumer which information may be used to define such market segments.

The results of the quantitative method of this invention are conveniently depicted in a factors map, created for each prompt, wherein the attributes are grouped in factors defined in the factor analysis and are ordered by their importance as criteria in the

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consumer purchase decision. Factors maps may also be  
5 created for target groups of consumers defined by  
responses to various questions posed during the  
interviews and designed to elicit demographic and/or  
purchase behavior characteristics of the consumers. The  
significant information to be derived from the factors  
10 maps are the differences between each attribute  
evaluation for the prompt and the mean of all attribute  
evaluations for all prompts. These differences are  
preferably expressed as standard deviations. The  
prompts for which such differences are significant  
15 deviations above that mean for factors which have the  
greatest contribution, i.e., are the most important  
criteria to the consumer purchase decision, are  
identified as the most desirable concepts and/or  
communications of benefits. This most effectively  
20 identifies to the market researcher the concepts which,  
when embodied in products, will most likely achieve high  
trial rates and become successes in the market. This  
also identifies to the market researcher the underlying  
criteria of the consumers' favorable ratings of  
25 concepts, expressed in terms of the same attribute  
evaluations, grouped as factors, which the consumers use  
in evaluating existing products and making purchase  
decisions.

30 An example of a factors map is depicted in  
Figure 3. The factors, and attributes within each  
factor, are ordered, from left to right, in decreasing  
importance as criteria in consumer preference or  
purchase interest for the concept. The attributes are  
35 grouped as factors and shown within columns which

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5 represent the factors, separated by vertical dashed  
lines. The contribution of each factor to purchase  
intent, expressed as a percentage, is shown at the top  
of each column. The attributes are identified by number  
on the horizontal axis, and a scale of standard  
deviations is marked on the vertical axis. The mean of  
10 all attribute evaluations for all prompts is represented  
by a straight horizontal line and the points  
representing the attribute evaluations for each factor  
for that prompt are shown as deviating above or below  
that horizontal line and are connected by an irregular  
15 horizontal line.

Moreover, the entire spectrum of attribute  
evaluations and deviations of those evaluations, which  
are derived from each factors map, reveals to the market  
researcher the criteria upon which the consumer  
20 evaluations of the concept are based and the importance  
of each criterion to the consumer's decision to purchase  
a product embodying the concept. This provides the  
market researcher with the key to translating the  
concept into a product and to effectively communicating  
25 the benefits of that product in advertising.

It will be understood that the invention is  
not limited to the preferred illustrations and  
embodiments described above, but also encompasses the  
30 subject matter delineated by the following claims and  
all equivalents thereof.

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## CLAIMS

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I claim:

1. A method of concept testing comprising:

10

a. performing a multi-attribute evaluation of prompts comprising concepts and existing products which compete in the same consumer market;

15

b. eliciting from consumers evaluations of the extent to which each attribute ideally should be possessed by a product in the same consumer market;

20

c. eliciting from consumers evaluations of their likelihood of purchasing the existing products and products described by the prompts;

25

d. performing an independence factor analysis of the attributes whereby clusters of related attributes are formed and are identified as factors;

30

e. performing for each prompt a squeeze analysis of the factors whereby (i) a matrix of factors is created wherein points defining the Euclidean distances between each product and the ideal product are plotted based upon the attribute evaluations associated with each product and (ii) a rating is assigned to each factor and to each attribute so that the Euclidean distances between

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5 the points on the matrix representing each product  
and the point representing the ideal product are  
re-ranked into the same order as the likelihoods of  
purchasing each product.

2. A method of concept testing comprising:

10 a. performing a multi-attribute  
evaluation of prompts comprising concepts and  
existing products which compete in the same  
consumer market;

15 b. eliciting from consumers evaluations  
of the extent to which each attribute ideally  
should be possessed by a product in the same  
consumer market;

20 c. eliciting from consumers evaluations  
of their likelihood of purchasing the existing  
products and products described by the prompts;

25 d. performing an independence factor  
analysis of the attributes whereby clusters of  
related attributes are formed and are identified as  
factors;

30 e. performing for each prompt a squeeze  
analysis of the factors whereby (i) a matrix of  
factors is created wherein points defining the  
Euclidean distances between each product and the  
ideal product are plotted based upon the attribute  
35 evaluations associated with each product and (ii) a

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5 rating is assigned to each factor and to each attribute so that the Euclidean distances between the points in the matrix representing each product and the point representing the ideal product are re-ranked into the same order as the likelihoods of purchasing each product;

10 f. calculating, for each prompt, the deviation of each respective attribute evaluation for that prompt from the mean of the attribute evaluations for all prompts.

15 3. A method according to claim 1 wherein the prompts are also comprised of communications of the benefits of existing products as currently communicated to the consumers in the market.

20 4. A method according to claim 1 wherein the attributes used in the multi-attribute evaluation are comprised of rational, personality and stereotype descriptors.

25 5. A method according to claim 4 wherein the attributes used in the multi-attribute evaluations are selected from descriptors elicited from consumers on the basis of their ability to enable consumers to discriminate between products.

30 6. A method according to claim 1 wherein the attributes selected systematically provide a level of behavioral variance greater than 70%.

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5 7. A method according to claim 1 wherein the attributes selected provide a level of behavioral variance of about 90% or greater.

10 8. A method according to claim 5 wherein the attributes selected systematically provide a level of behavioral variance greater than 70%.

15 9. A method according to claim 5 wherein the attributes selected provide a level of behavioral variance of about 90% or greater.

20 10. A method according to claim 2 wherein the deviations of attribute evaluations for each prompt are calculated for market segments defined by characteristics identified in further consumer responses obtained during the eliciting steps.

25 11. A method according to claim 2 wherein the deviations of attribute evaluations are calculated by measuring on a factors map, for each prompt or for each purpose for each prompt, the distance between the points representing the respective attribute evaluations and the points representing mean attribute evaluations for other concepts or competitive products.

30 12. A method according to claim 1 wherein the evaluations in each concept test are further limited to concepts and products used for a given purpose.

35 13. A method for testing concepts comprising:

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5           a. eliciting from consumers descriptors  
of products including rational, personality and  
stereotype descriptors;

10           b. submitting the descriptors to  
consumers in qualitative interviews in order to  
reduce the number of descriptors by eliminating  
those which the interviews indicate are least  
sufficient as bases for the consumers to  
distinguish between the products;

15           c. eliciting from consumers quantitative  
evaluations of the extent to which the non-  
eliminated descriptors are attributable to the  
products;

20           d. calculating a discrimination index of  
the evaluated descriptors whereby the least number  
of descriptors, which provide the most  
discrimination between items and which account for  
the greatest amount of behavioral variance over 70%  
25 among the interviewed consumers, are identified as  
attributes;

30           e. eliciting from consumers in  
projective qualitative interviews benefits that  
communicate positive characteristics which  
consumers associate with similarly positioned  
products;

35           f. creating concepts which represent the  
elicited benefits;

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5           g. eliciting from consumers evaluations  
of the extent to which the attributes are  
attributable to the existing products similarly  
positioned in the market;

10           h. eliciting from consumers evaluations  
of the extent to which each attribute ideally  
should be possessed by a product similarly  
positioned in the market;

15           i. eliciting from consumers evaluations  
of their likelihood of purchasing the products;

20           j. exposing to consumers a set of  
prompts comprising (i) concepts representing the  
benefits that consumers associated with the  
products in step e, (ii) other given concepts  
describing potential benefits of the products and  
(iii) existing expressions of benefits of currently  
available products;

25           k. eliciting from consumers evaluations  
of the extent to which each attribute is  
attributable to a product described by each prompt;

30           l. eliciting from consumers evaluations  
of the likelihood of purchasing a product described  
by each prompt;

35           m. performing an independence factor  
analysis of the attributes whereby clusters of  
related attributes are formed and are identified as

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factors;

5                   n. performing for each prompt a squeeze  
analysis of the factors whereby (i) a matrix of  
factors is created wherein points defining the  
Euclidean distances between each product and the  
10                   ideal product are plotted based upon the attribute  
evaluations associated with each product and (ii) a  
rank is assigned to each factor and to each  
attribute so that the Euclidean distances between  
the points on the matrix representing each product  
and the point representing the ideal product are  
15                   re-ranked into the same order as the likelihoods of  
purchasing each product;

14. A method according to claim 13 wherein  
20                   the attributes selected provide a level of behavioral  
variance of about 90% or greater.

15. A method for testing concepts comprising:

25                   a. eliciting from consumers descriptors  
of products including rational, personality and  
stereotype descriptors;

30                   b. submitting the descriptors to  
consumers in qualitative interviews in order to  
reduce the number of descriptors by eliminating  
those which the interviews indicate are least  
sufficient as bases for the consumers to  
distinguish between the products;

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5 c. eliciting from consumers quantitative evaluations of the extent to which the non-eliminated descriptors are attributable to the products;

10 d. calculating a discrimination index of the evaluated descriptors whereby the least number of descriptors, which provide the most discrimination between items and which systematically account for the greatest amount of behavioral variance over 70% among the interviewed consumers, are identified as attributes;

15 e. eliciting from consumers in projective qualitative interviews benefits that communicate positive characteristics which consumers associate with similarly positioned products;

20 f. creating concepts which represent the elicited benefits;

25 g. eliciting from consumers evaluations of the extent to which the attributes are attributable to the existing products similarly positioned in the market;

30 h. eliciting from consumers evaluations of the extent to which each attribute ideally should be possessed by a product similarly positioned in the market;

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5 i. eliciting from consumers evaluations  
of their likelihood of purchasing the products;

10 j. exposing to consumers a set of  
prompts comprising (i) concepts representing the  
benefits that consumers associated with the  
products in step e, (ii) other given concepts  
describing potential benefits of the products and  
(iii) existing expressions of benefits of currently  
available products;

15 k. eliciting from consumers evaluations  
of the extent to which prompts are associated with  
existing products;

20 l. eliciting from consumers evaluations  
of the extent to which each attribute is  
attributable to a product described by each prompt;

25 m. eliciting from consumers evaluations  
of the likelihood of purchasing a product described  
by each prompt;

30 n. performing an independence factor  
analysis of the attributes whereby clusters of  
related attributes are formed and are identified as  
factors representing constructs of consumer  
behavior associated with distinguishing between  
products;

35 o. performing for each prompt a squeeze  
analysis of the factors whereby (i) a matrix of

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5 factors is created wherein points defining the  
Euclidean distances between each product and the  
ideal product are plotted based upon the attribute  
evaluations associated with each product and (ii) a  
rank is assigned to each factor and to each  
attribute so that the Euclidean distances between  
10 the points on the matrix representing each product  
and the point representing the ideal product are  
re-ranked into the same order as the likelihoods of  
purchasing each product;

15 p. calculating for each prompt the  
deviation of each attribute evaluation for that  
prompt, from the mean of the attribute evaluations  
for all prompts, for groups of consumers defined by  
characteristics identified in further responses  
20 obtained during the eliciting steps.

16. A method according to claim 15 wherein  
the attributes selected provide a level of behavioral  
variance of about 90% or greater.

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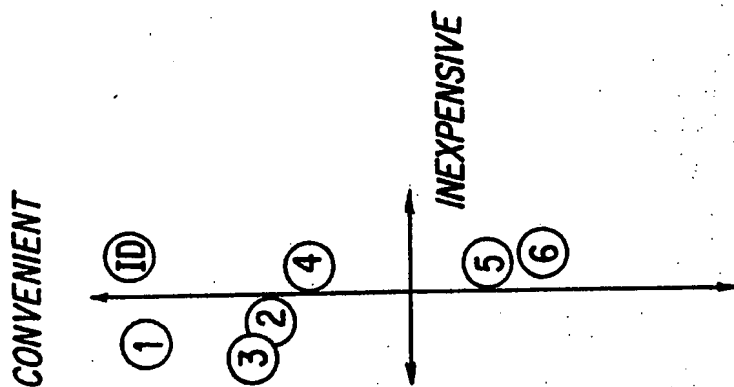


FIG. 2

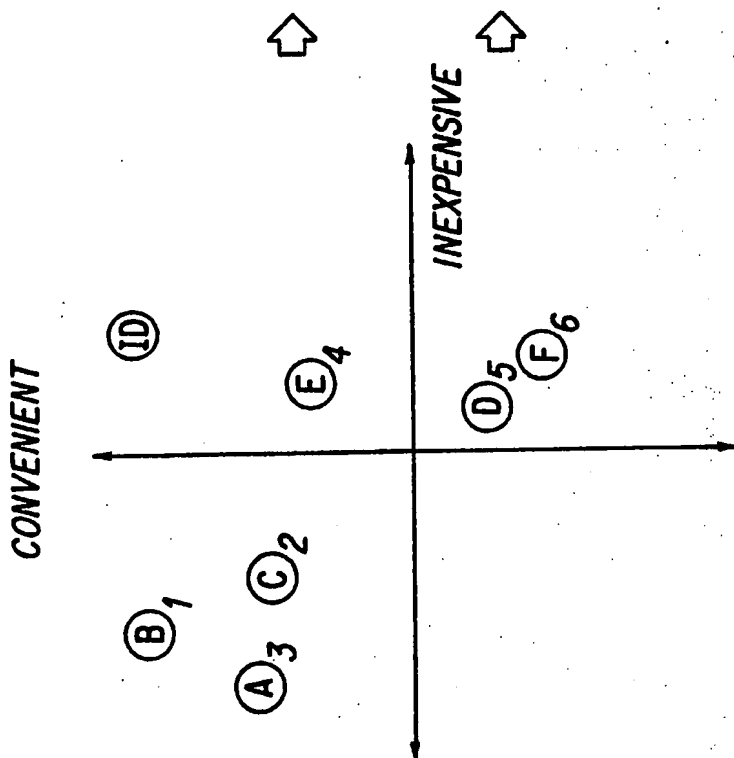


FIG. 1

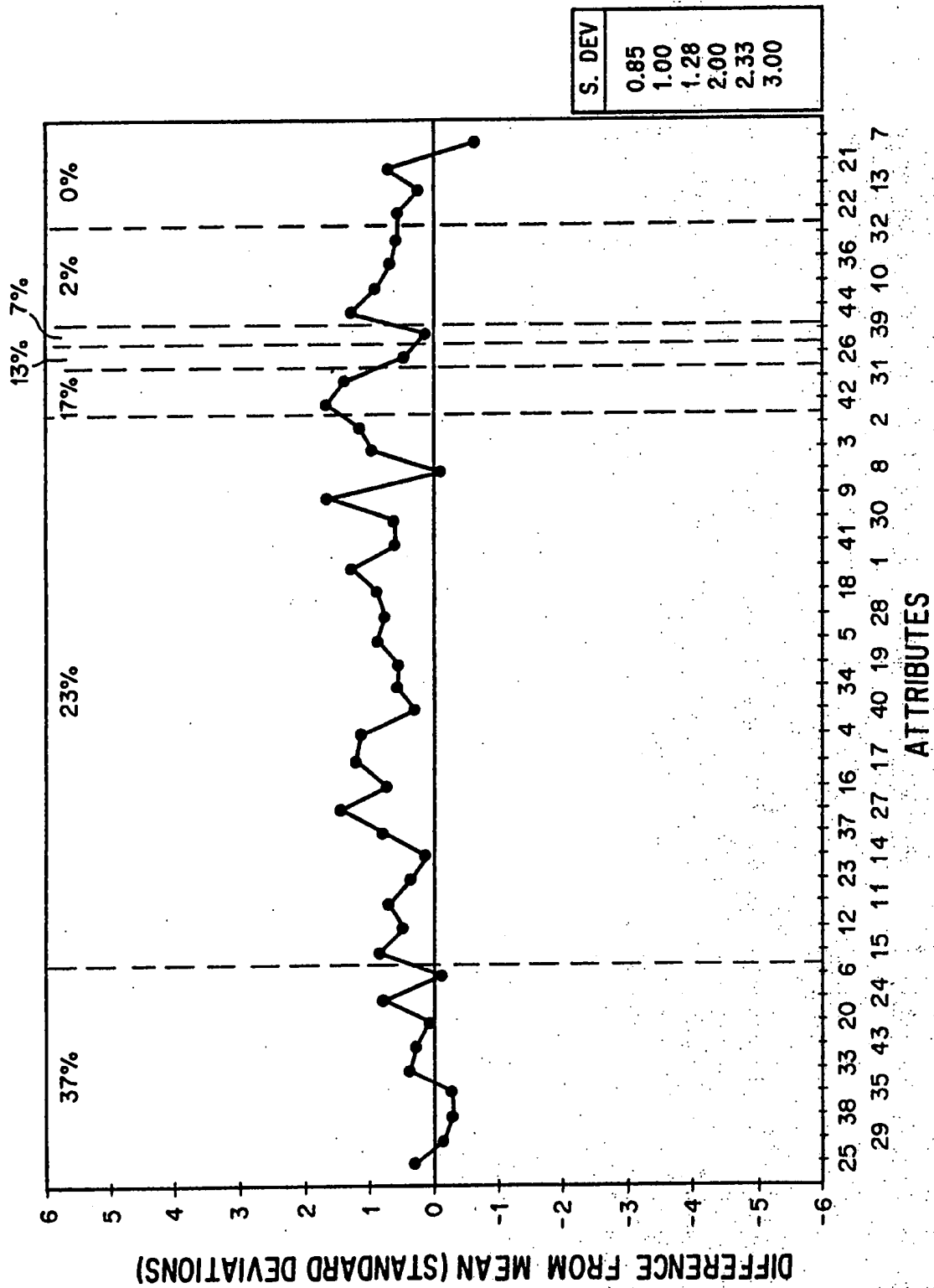


FIG. 3

# INTERNATIONAL SEARCH REPORT

International Application No. PCT/US89/04287

<b>I. CLASSIFICATION OF SUBJECT MATTER</b> (if several classification symbols apply, indicate all) <sup>6</sup> According to International Patent Classification (IPC) or to both National Classification and IPC IPC(4): G06F 15/21, 15/36 U.S. Cl.: 364/401, 419																				
<b>II. FIELDS SEARCHED</b> <div style="text-align: center; border-top: 1px solid black; border-bottom: 1px solid black;">Minimum Documentation Searched <sup>7</sup></div> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; border-bottom: 1px solid black;">Classification System</td> <td style="border-bottom: 1px solid black;">Classification Symbols</td> </tr> <tr> <td style="padding: 5px;">U.S. Cl.</td> <td style="padding: 5px;">364/225, 401, 419</td> </tr> </table> <div style="text-align: center; border-top: 1px solid black; border-bottom: 1px solid black;">Documentation Searched other than Minimum Documentation to the extent that such Documents are included in the Fields Searched <sup>8</sup></div>			Classification System	Classification Symbols	U.S. Cl.	364/225, 401, 419														
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<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><sup>*</sup> Special categories of cited documents: <sup>10</sup></p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 45%;"> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"&amp;" document member of the same patent family</p> </div> </div>																				
<b>IV. CERTIFICATION</b> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-bottom: 1px solid black;">Date of the Actual Completion of the International Search</td> <td style="width: 50%; border-bottom: 1px solid black;">Date of Mailing of this International Search Report</td> </tr> <tr> <td style="padding: 5px;">19 December 1989</td> <td style="text-align: center; padding: 5px;"><b>11 JAN 1990</b></td> </tr> <tr> <td style="border-bottom: 1px solid black;">International Searching Authority</td> <td style="border-bottom: 1px solid black;">Signature of Authorized Officer</td> </tr> <tr> <td style="padding: 5px;">ISA/US</td> <td style="text-align: center; padding: 5px;">             Stephen M. Baker         </td> </tr> </table>			Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report	19 December 1989	<b>11 JAN 1990</b>	International Searching Authority	Signature of Authorized Officer	ISA/US	 Stephen M. Baker										
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III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)		
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A	Journal of Marketing Research, Volume 16, issued 1979, May, A. Shocker and V. Srinivasan, "Multiattribute Approaches for Product Concept Evaluation and Generation: A Critical Review", see pages 159 to 180.	
A	Journal of Consumer Research, Volume 5, issued 1979, March, J. Hauser and G. Urban, "Assessment of Attribute Importances and Consumer Utility Functions: von Neumann-Morganstern Theory Applied to Consumer Behavior", see pages 251 to 262.	
A	Journal of Marketing Research, Volume 15, issued 1978, May, A. Silk and G. Urban, "Pre-Test-Market Evaluation of New Packaged Goods: A Model and Measurement Methodology", see pages 171 to 191.	
A	Operations Research, Volume 25, no. 4, issued 1977, July, J. Hauser and G. Urban, "A Normative Methodology for Modeling Consumer Response to Innovation", see pages 579 to 619.	
A	J. Meyers and E. Tauber, "Market Structure Analysis", published 1977, by the American Marketing Association, see pages 90 to 137.	
A	Management Science, Volume 21, no. 8, issued 1975, April, G. Urban, "PERCEPTOR: A Model for Product Positioning", see pages 858 to 871.	